

Date: Tuesday, 03/03/2009 7:26:58 AM
 User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : AFT TUBE ASSEMBLY
 Job Number : 46229
 Estimate Number : 10699
 P.O. Number :
 This Issue : 03/03/2009 S.O. No. :
 Prsht Rev. : NC Part Number : D3391025
 First Issue : / / Type : SKIDTUBES Drawing Number : D3391 REV H
 Previous Run : 46228 Project Number : N/A
 Material :
 Due Date : 20/03/2009 Qty: 1 Um: Each
 Written By :
 Checked & Approved By :
 Comment : Est Rev B 06-02-07 ECN773 dwg rev. D EC
 Est Rev:C 06-03-28 Update Manuf. Instructions JLM
 est rev D 07.03.20 revF dwg EC
 est rev E 07.11.07 rev G dwg ecn 1053p EC verified by:
 DD
 Est Rev:F 07-11-13 ECN 1056 DD verified by: EC
 Est Rev:G 08-09-10 revH as per dwg DD verified by:EC

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D6014090 ALUMINUM EXTRUSION



Comment: Qty.: 1.0000 f(s)/Unit Total: 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty Part Number Description Batch
 Extrusion B42768
 Identify as D3391-3

a.m 09.03.04 ①

2.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599

Rev: AA & Dwg D3391 Rev: H

Pm / a.m 09.03.04 ②

3.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Pm / a.m 09.03.04 ③

4.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

1-Machine as per Folio FA 599 Rev: H & Dwg D3391 Rev: H

2-Deburr

3.L 09/03/17

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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 46229

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JL 09/03/17

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

SP 09/03/13

7.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

Pm' 09-03-19(1)

8.0

BENDING

BENDING MACHINE - SKIDTUBES



Comment: NC Bender

Form as per Dwg D3391 Using Bend Prog 3391025

DP

9-3-19

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/03/23

10.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217 Wearplate Jig .

*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2 previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per Dwg D3391.

7-Deburr

Tools: rill

M
9-3-24

Pm' 09-03-25(1)

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 46229

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Sc 09/03/25 (10)

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

Pr 09-03-25 (10)

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Sc 09/03/25 (10)

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

SPACER

batch: B46106

Pr 09-03-25 (10)

15.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Instal spacers as per dwg D3391

A/R Magnabond 6398 Batch: M109900

exp. date: 09-09-19

cure time 12hrs as per QSI0015

Pr 14 09-03-25 (10)

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Sc 09/04/10 (10)

17.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING pressure wash 09-04-01 - xl sh
Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3 M110939

START TIME: 8:30

OVEN TEMPERATURE: 325

FINISH TIME: 9:00

Pr 09-04-2 (10)

Date: Tuesday, 03/03/2009 7:26:58 AM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 46229

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-04-06

(X)

19.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Pick:

Qty

Part Number Description Batch

1

D2646

Aft Cap

1346327

HP

20.0

D35371

Wearpad



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

1345716

HP

21.0

D35377

Wearpad



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

1333869

HP

22.0

D35531

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

1333868

HP

23.0

D35533

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

1333870

HP

24.0

D36721

Phenolic Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PHENOLIC WASHER

1339275

HP

25.0

ALS41032130

Insert



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

INSERT

batch: M108606

*

HP

09-04-06

(X)

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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT TUBE ASSEMBLY

Job Number: 46229

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

or equivalent per
QSI 017

26.0

ALS41032225

Insert



Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)
INSERT
or equivalent
Per QSI 017 *M119393* *JS*

27.0

AN3C4A

BOLT



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)
Bolt
Pick:
Qty Part Number Description Batch
2 AN3C4A Bolt *M111279* *JS*

28.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Bolt *M1110916* *JS*

29.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
Inventory
Pick:
Qty Part Number Description Batch
2 AN960C10L Washer *M111193* *JS*

30.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 *M1109883*

Sikaflex expiry date: *09/11*

JS *09-04-06* *KL*

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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 46229

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

50864/66

32.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

PPD 4/6/09 12/9/9 (1)

33.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/04/14

Job Completion



MF 09-04-09

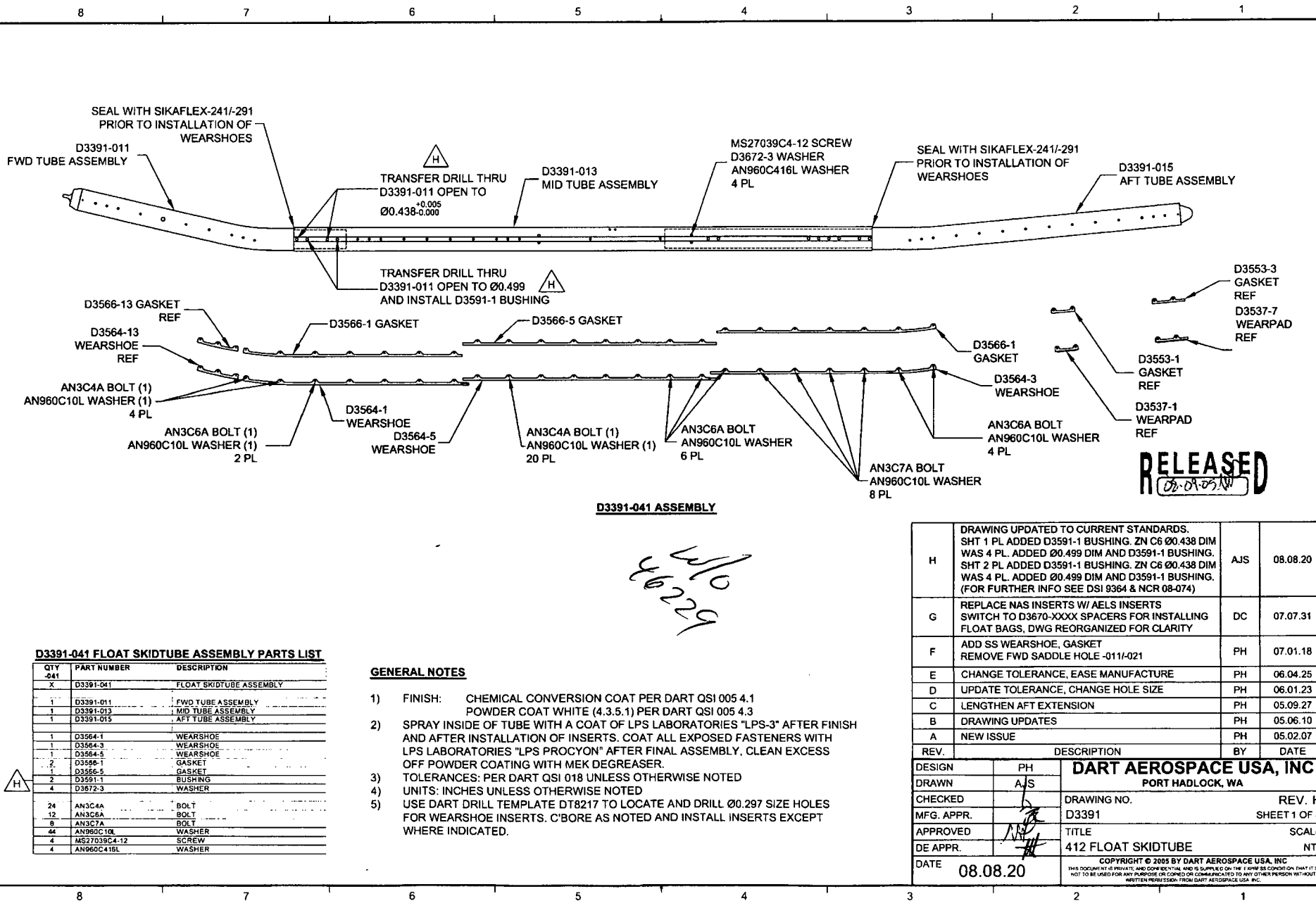
FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article** ☐ **Prototype**

[illegible]

Measured by: JL	Audited by: SP	Prototype Approval:	N/A
Date: 09/03/17	Date: 09/03/18	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	



D3391-041 ASSEMBLY

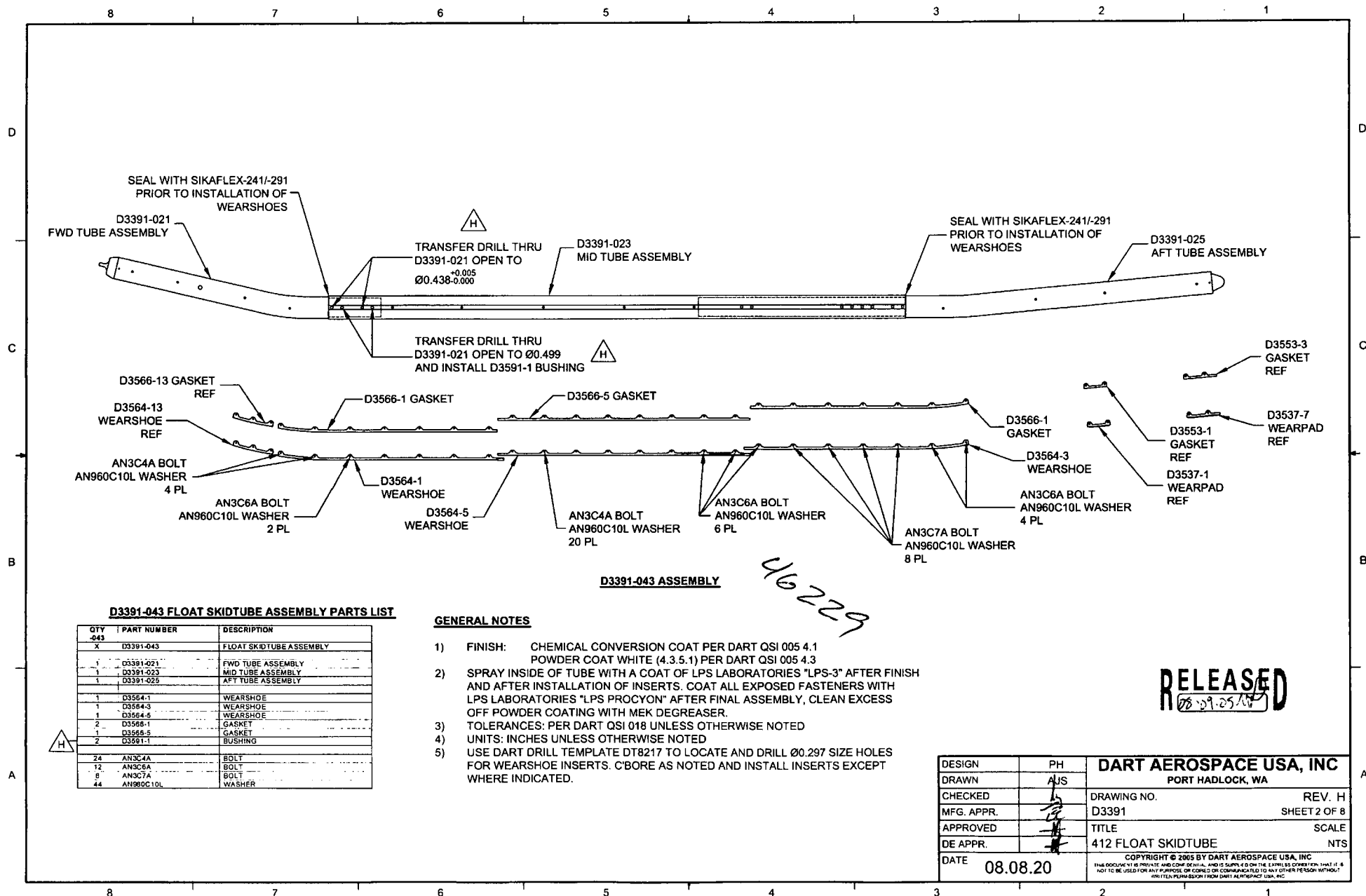
D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

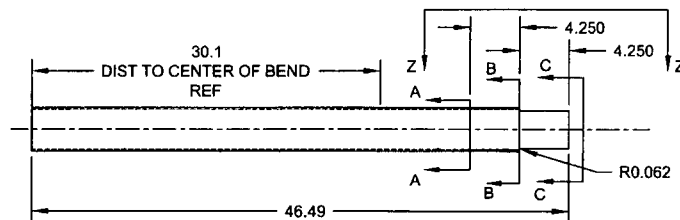
QTY	PART NUMBER	DESCRIPTION
1	D3391-041	Float Skidtube Assembly
1	D3391-011	FWD Tube Assembly
1	D3391-013	MID Tube Assembly
1	D3391-015	AFT Tube Assembly
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
6	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C415L	WASHER

GENERAL NOTES

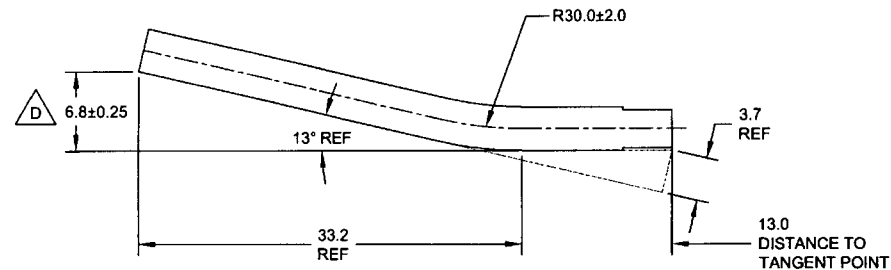
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

REV.	DESCRIPTION	BY	DATE																										
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 00.438 DIM WAS 4 PL. ADDED 0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 00.438 DIM WAS 4 PL. ADDED 0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20																										
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31																										
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18																										
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25																										
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23																										
C	LENGTHEN AFT EXTENSION	PH	05.09.27																										
B	DRAWING UPDATES	PH	05.06.10																										
A	NEW ISSUE	PH	05.02.07																										
<table border="1"> <tr> <td>DESIGN</td><td>PH</td><td colspan="2" rowspan="2"> DART AEROSPACE USA, INC PORT HADLOCK, WA </td></tr> <tr> <td>DRAWN</td><td>AJS</td></tr> <tr> <td>CHECKED</td><td></td><td>DRAWING NO.</td><td>REV. H</td></tr> <tr> <td>MFG. APPR.</td><td></td><td>D3391</td><td>SHEET 1 OF 8</td></tr> <tr> <td>APPROVED</td><td></td><td>TITLE</td><td>SCALE</td></tr> <tr> <td>DE APPR.</td><td></td><td>412 FLOAT SKIDTUBE</td><td>NTS</td></tr> <tr> <td>DATE</td><td>08.08.20</td><td colspan="2"> COPYRIGHT © 2005 BY DART AEROSPACE USA, INC <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCE OR IN ANY OTHER MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> </td></tr> </table>				DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA		DRAWN	AJS	CHECKED		DRAWING NO.	REV. H	MFG. APPR.		D3391	SHEET 1 OF 8	APPROVED		TITLE	SCALE	DE APPR.		412 FLOAT SKIDTUBE	NTS	DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCE OR IN ANY OTHER MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	
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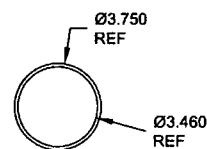




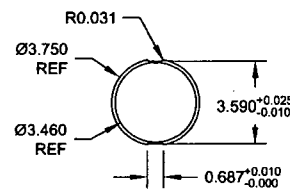
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



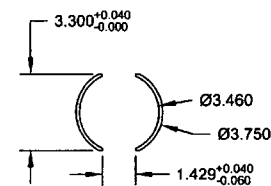
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



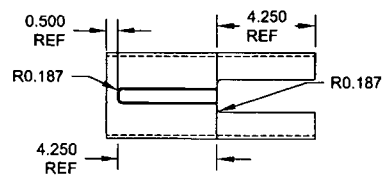
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X







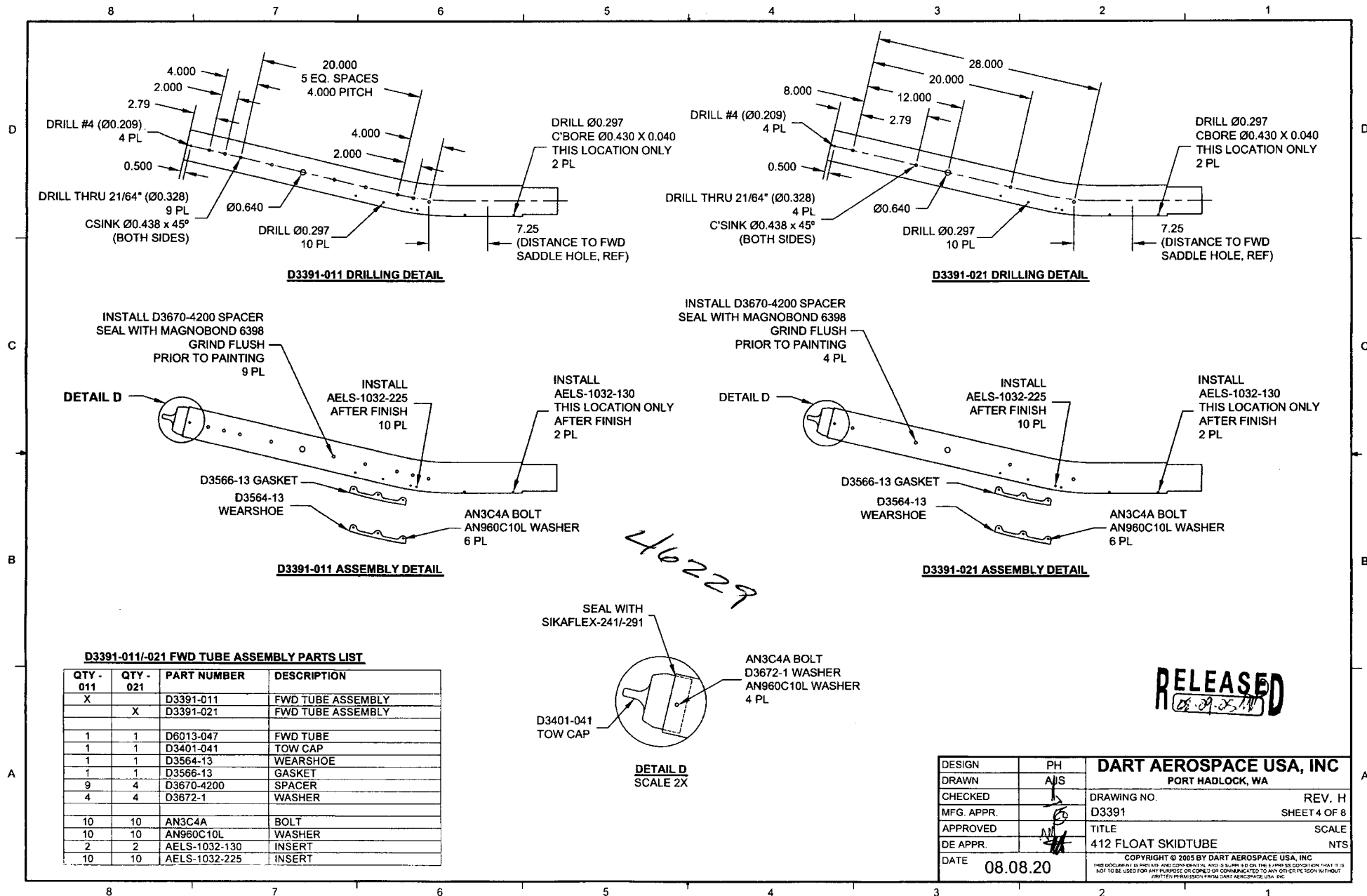
SECTION C-C
SCALE 2X

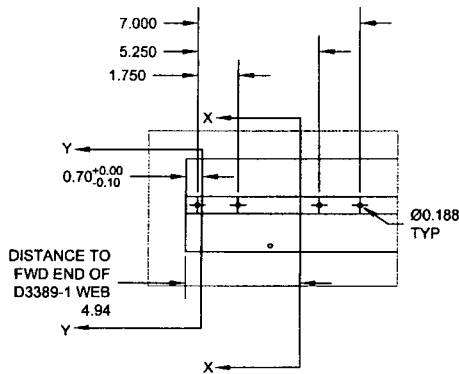


VIEW Z-Z
SCALE 2X

RELEASED
08-05-11

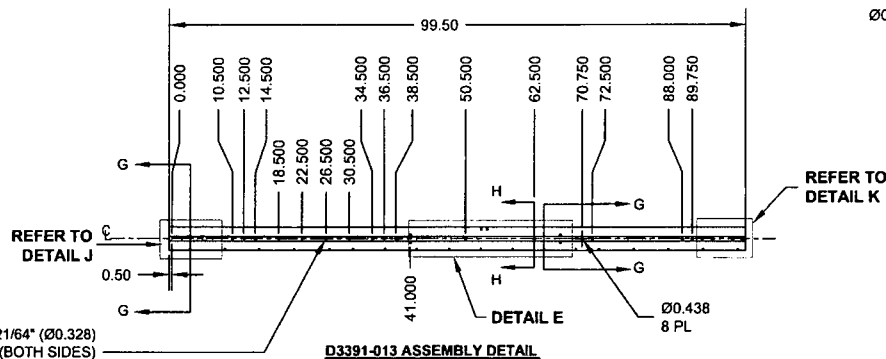
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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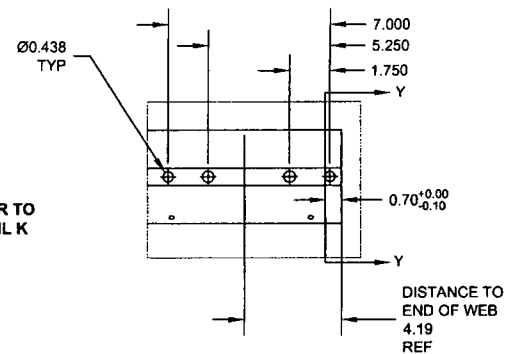


DETAIL J
SCALE 4X

DRILL THRU 21/64" (Ø0.328)
CSINK Ø0.438 X 45° (BOTH SIDES)
12 PL



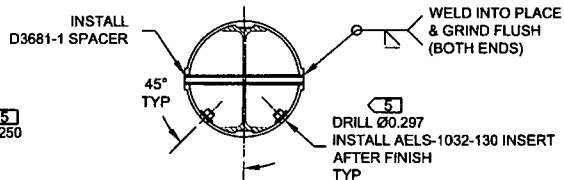
D3391-013 ASSEMBLY DETAIL



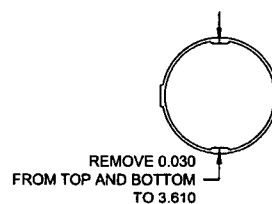
DETAIL K
SCALE 4X



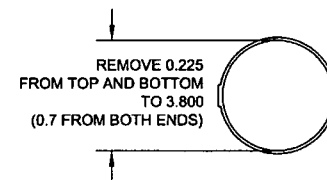
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



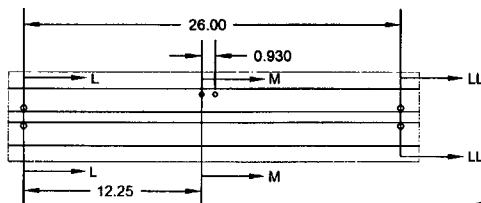
SECTION X-X
SCALE 5X



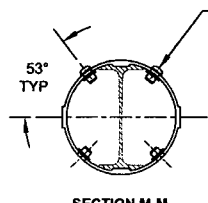
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

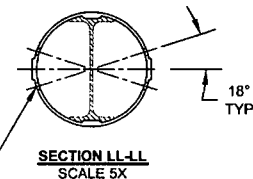


DETAIL E
SCALE NONE



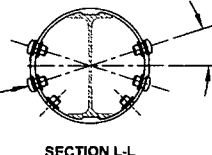
SECTION M-M
SCALE 5X

DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-09 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL



SECTION LL-LL
SCALE 5X

DRILL Ø0.391
INSTALL ALS4-428-165 INSERT
MS27039C4-08 SCREW
D3672-3 WASHER
AN960C416L WASHER
AFTER FINISH
4 PL



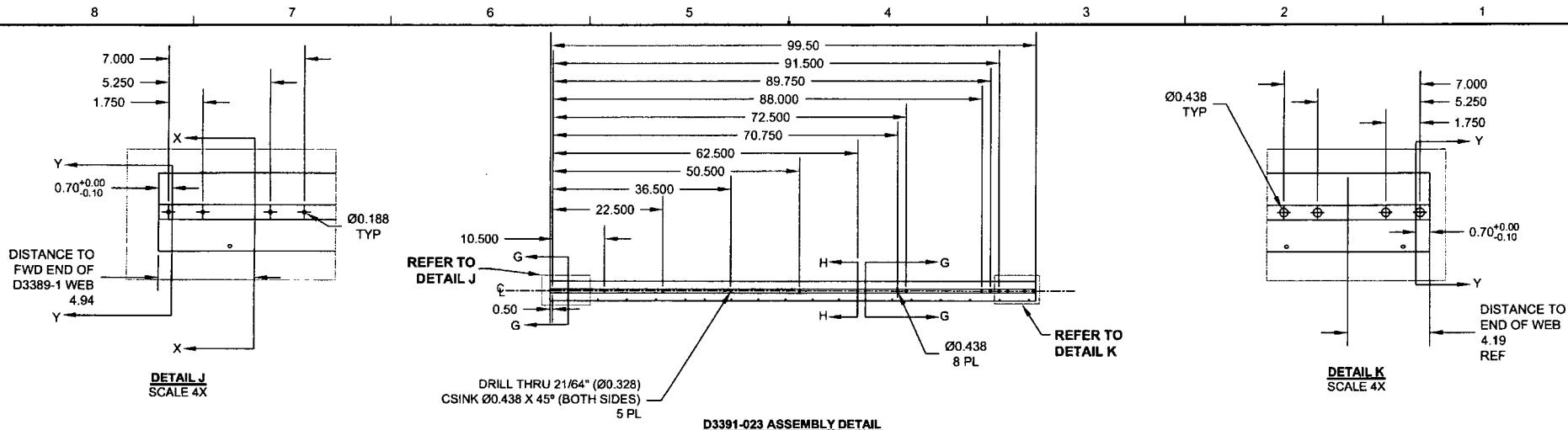
SECTION L-L
SCALE 5X

D3391-013 MID TUBE ASSEMBLY

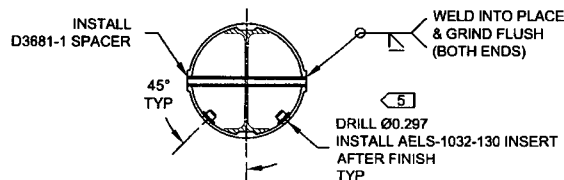
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AUS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 5 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC

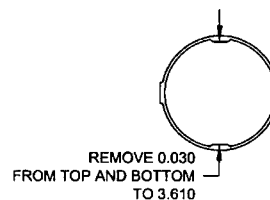
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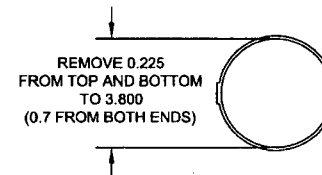
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY -	PART NUMBER	DESCRIPTION
023		
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

RELEASED
08-05-17

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC

36.435
7.500
43.935

